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10/785,617	02/23/2004	Christopher M. Look	6518P008	2950

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EXAMINER	
LEUNG, WAI LUN	
ART UNIT	**PAPER NUMBER**
2613	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/785,617	LOOK, CHRISTOPHER M.	
	Examiner	Art Unit	
	Danny Wai Lun Leung	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20050113*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-5, 13, 16-18, and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by **Li et al.** *(US005515361A).*

Regarding to claim 1, **Li** discloses a method to verify connectivity between an optical transceiver *(station 1, fig 2)* and a wavelength switch module (WSM) *(301, fig 2)*, the method comprising: sending a first optical signal from the optical transceiver to the WSM *(signals in uplink 206, fig 2)*; checking a second optical signal *(signals in downlink 207, fig 2)* received by the optical transceiver after sending the first optical signal and determining whether the second optical signal corresponds to the first optical signal *(col 3, ln 61-66 "The station then periodically sends light pulses... then receive its own pulses and decide that the link is up").*

As to claim 3, **Li** further discloses the method of claim 1, further comprising putting an identification *(periodic pulses, col 3, ln 61-62)* into the first optical signal to send with the first optical signal to the WSM, wherein determining whether the second optical signal corresponds to the first optical signal comprises checking whether the second optical signal includes the identification *(col 3, ln 62-66).*

As to claim 4, **Li** further discloses the method of claim 3, further comprising sending an error message if the second optical signal does not include the identification *(col 3, ln 51-57,*

where, when the down-link 207 fails, i.e. the second optical signal does not include the identification, the monitor photodiode 203 sends an error message to turn off the transmitter 201).

Regarding to claim 13, **Li** discloses an apparatus comprising: a wavelength switch module (WSM) *(301, fig 2)*; an optical transceiver *(station 1, fig 2)*, detachably coupled to the WSM, to send a first optical signal to the WSM *(col 3, ln 61-62)* and to detect a second optical signal received from the WSM after sending the first optical signal *(col 3, ln 62-66)*; and a set of one or more processors *(finite state machine 500, fig 4)* to automatically determine whether the second optical signal corresponds to the first optical signal in response to an interrupt from each of the WSM and the optical transceiver *(col 4, ln 18-48)*.

Regarding to claim 18, **Li** discloses a system comprising: an optical network including a plurality of optical fibers *(fig 2 shows a portion of a STAR network, coupling Station 1 with a switch over uplink 206 and down link 207, and station 2 via a star coupler)*; and a first optical network node *(station 1, along with switch 301, fig 2)*, coupled to the optical network *(via star coupler 204)*, the first optical network node comprising: a wavelength switch module (WSM) *(301, fig 2)*; an optical transceiver *(station 1, fig 2)*, detachably coupled to the WSM *(as shown in fig 2)*, to send a first optical signal to the WSM *(col 3, ln 61-62)* and to detect a second optical signal received from the WSM after sending the first optical signal *(col 3, ln 62-66)*; and a set of one or more processors *(finite state machine 500, fig 4)* to automatically determine whether the second optical signal corresponds to the first optical signal in response to an interrupt from each of the WSM and the optical transceiver *(col 4, ln 18-48)*.

As to claims 5, 16, and 21, **Li** further discloses wherein the first optical signal enters the WSM at an input port of the WSM *(input port of 1x2 switch, fig 2)*, passes through a channel *(306, fig 2)* of the WSM, and exits through an output port of the WSM *(output port connecting to downlink 207, fig 2)*, the output port being coupled to the input port via the channel *(306, fig 2)* and having a one-to-one correspondence with the input port *(switch 301 has 3 input ports and 3 output ports, fig 2)*.

As to claims 17 and 22, **Li** further discloses wherein the optical transceiver comprises a light source, which is tunable to a wavelength designated to the channel *(col 4, ln 4-26)*.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 6-8, and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Li et al.** *(US005515361A)*, in view of **Lahat et al.** *(US006417944B1)*.

Regarding claims 6 and 23, **Li** discloses the method in accordance to claim 5 as discussed above. **Li** does not disclose expressly for the method to further comprising: causing a processor to look up a wavelength designated to the channel; and checking whether the optical transceiver is at the wavelength designated to the channel. **Lahat**, from the same field of endeavor, teaches a method comprising: causing a processor *(32, fig 2)* to look up a wavelength designated to the channel *(col 8, ln 4-7)*; and checking whether the optical transceiver is at the wavelength

designated to the channel *(col 8, ln 7-8)*. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to use **Lahat's** processor to look up a wavelength designated to **Li's** channel; and checking whether **Li's** optical transceiver is at the wavelength designated to the channel. The motivation for doing so would have been to be able to dynamically assign different wavelengths to the transceiver using a processor with a look up table such as that of **Lahat's**.

As to claims 7 and 24, **Lahat** further teaches tuning a light source of the optical transceiver to the wavelength designated to the channel if the optical transceiver is not at the wavelength designated to the channel *(col 8, ln 23-25)*.

As to claims 8 and 25, **Lahat** further discloses wherein causing the processor to look up the wavelength comprises sending an interrupt to the processor upon detection of the first optical signal at the input port of the WSM *(col 10, ln 53-61; 140, fig 7)*.

5. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lahat et al.** *(US006417944B1)*, in view of **Koren et al.** *(US006826368B1)*.

Regarding claim 9, **Lahat** discloses a machine-accessible medium *(memory 34, fig 2)* that provides instructions that, if executed by a processor, will cause the processor to perform operations *(fig 7)* comprising: in response to an interrupt *(scheduler checks for collision, col 9, ln 16-22)* from a wavelength switch module *(interface card 60, fig 3; col 9, ln 32-37)*, identifying an input port of the WSM that receives a first optical signal from an optical transceiver *(col 10, ln 11-20)*. **Lahat** does not disclose expressly the step of identifying the wavelength switch module. **Koren**, from the same field of endeavor, teaches identifying a wavelength switch

module *(col 6, ln 13-53, a routing table determines the network location of a particular subnetwork such as a wavelength switch module, corresponding to a particular wavelength).* Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to identify **Lahat's** wavelength switch module in a similar manner that **Lahat's** input port of the WSM is identified, as suggested by **Koren**. The motivation for doing so would have been to quickly and easily identify the Wavelength Switch Module and an input port of the WSM by it associated wavelength.

As to claim 10, **Lahat** further discloses wherein the operations further comprise: determining whether the optical transceiver has received a second optical signal after sending the first optical signal *(col 10, ln 50-52)*; and identifying a wavelength designated to a channel in the WSM corresponding to the input port *(col 10, ln 43-48).*

As to claim 11, **Lahat** further discloses wherein the operations further comprise: tuning a light source of the optical transceiver to the designated wavelength if the light source is not at the designated wavelength *(col 10, ln 11-20; col 10, ln 43-50).*

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Lahat et al.** *(US006417944B1)*, in view of **Koren et al.** *(US006826368B1),* as applied to claim 10 above, and further in view of **Lyu et al.** *(US006369926B1).*

Regarding claim 12, **the combination of Lahat and Koren** discloses the limitations in accordance to claim 10 as discussed above. **It** does not disclose expressly wherein the operations further comprise: sending an error message if the light source is not at the designated wavelength. **Lyu**, from the same field of endeavor, teaches sending an error message if the light

source is not at the designated wavelength *(col 3, ln 51-59)*. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to send an error message if the light source is not at the designated wavelength in **the combination of Lahat and Koren**'s system as taught by **Lyu**. The motivation for doing so would have been to decrease signal to noise ratio by using error signals to reduce wavelength variation *(Lyu, col 3, ln 19-26)*.

7. Claim 26 rejected under 35 U.S.C. 103(a) as being unpatentable over **Kinoshita et al.** *(US007076163B2)*, in view of **Li et al.** *(US005515361A)*.

Regarding claim 26, **Kinoshita** discloses a method for commissioning in an optical network node *(201, fig 8; fig 9)* comprising: transmitting an optical signal of a given wavelength from an optical transceiver *(270, fig 9)* that is in the optical network node, wherein a laser *(col 6, ln 54-59 describes a laser can be set to transmit a specified wavelength)* of said optical transceiver is connected to one of a plurality of add ports *(312, fig 9)* on one of a plurality of wavelength switch modules (WSMs) *(WSMs includes 226, 222, 220, and 224, fig 9)* in said optical network node, wherein a light receiver *(268, fig 9)* of said optical transceiver is connected to a corresponding one of a plurality of drop ports *(314, fig 9)* on the one of the plurality of WSMs, wherein at least some of said plurality of WSMs handle different wavelengths than others *(col 7, ln 25-29; WSM for clockwise handles 1530.33nm, for example, the WSM for counter-clockwise handles 1531.12nm)* and this is tracked in configuration information *(col 15, ln 53-59)*, and detecting the optical signal in the one of the plurality of WSMs *(col 15, ln 48-52)*; based on said detecting of the optical signal, determining the wavelength handled by the one of the plurality of WSMs from the configuration information *(col 15, ln 53-65)*. **Kinoshita** does not disclose expressly wherein a default configuration for the plurality of WSMs is to pass

through a received optical signal from add port to corresponding drop port; detecting the optical signal at the optical transceiver; correlating said detectings to determine that the optical transceiver is connected to the one of the plurality of WSMs; and determining if the wavelength of the optical signal matches the wavelength handled by the one of the plurality of WSMs.

Li, from the same field of endeavor, teaches a default configuration for a WSM to pass through *(306, fig 2)* a received optical signal from add port *(206, fig 2)* to corresponding drop port *(207, fig 2)*; detecting the optical signal at the optical transceiver *(203, fig 2)*; correlating said detectings to determine that the optical transceiver is connected to the WSM *(col 3, ln 61-66)*; and determining if the wavelength of the optical signal matches the wavelength handled by the WSM *(col 4, ln 21-31)*. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to pass through a received optical signal from add port to corresponding drop port as a default configuration; detecting the optical signal at the optical transceiver; correlating said detectings to determine that the optical transceiver is connected to the one of the plurality of WSMs; and determining if the wavelength of the optical signal matches the wavelength handled by the one of the plurality of WSMs onto **Kinoshita**'s system as taught by **Li**. The motivation for doing so would have been to be able to continuously monitor connection failure.

8. Claims 2, 14, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Li et al.** *(US005515361A)*, in view of **Kinoshita et al.** *(US007076163B2)*.

Regarding claims 2, 14, and 19, **Li** discloses the limitations in accordance to claims 1, 13, and 18 as discussed above. **Li** does not disclose expressly wherein determining whether the

second optical signal corresponds to the first optical signal comprises: varying power of the first optical signal before the first optical signal exits the WSM; and measuring the second optical signal to determine whether power of the second optical signal changes in response to the varying of the power of the first optical signal. **Kinoshita**, from the same field of endeavor, teaches varying power of the first optical signal before the first optical signal exits the WSM *(using amplifiers 326 and 328, fig 9; col 13, ln 15-21)*; and measuring a second optical signal to determine whether power of the second optical signal changes in response to the varying of the power of the first optical signal *(col 13, ln 32-47, EMS 290 performs monitoring, failure detection, protection switching and loopback or localized testing functionality; col 4, ln 39-42 indicated that such monitoring includes wavelengths, power, and quality parameters)*. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to determine whether the second optical signal corresponds to the first optical signal by varying power of the first optical signal before the first optical signal exits the WSM; and measuring the second optical signal to determine whether power of the second optical signal changes in response to the varying of the power of the first optical signal in **Li**'s system as suggested by **Kinoshita**. The motivation for doing so would have been to be able to evaluate signal power distortion over the transmission link while checking for transmission link integrity.

9. Claims 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Li et al.** *(US005515361A)*, in view of **Tsao et al.** *(US006504969B1)*.

Regarding claims 15 and 20, **Li** discloses a method and apparatus in accordance to claims 13 and 18 as discussed above. **Li** further discloses wherein the optical transceiver put an

identification into the first optical signal to send with the first optical signal to the WSM *(periodic light pulses are sent to switch 301, col 3, ln 61-62)* and a check whether the second optical signal includes the identification *(the station receives its own pulse, col 3, ln 63-66)*. **Li** does not disclose expressly having an encoder to put the identification onto the first optical signa, and having a decoder to check for the identification. **Tsao**, from the same field of endeavor, teaches an encoder for outputting an identification pulse *(col 3, ln 57-60)*, and a decoder for checking the pulses remaining in the optical loop *(col 4, ln 31-58)*. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to use an encoder and decoder onto **Li**'s system to generate and detect the identification pulses as taught by **Tsao**. The motivation for doing so would have been to implement encoding and decoding using an easily controlled tunable means *(Tsao, col 5, ln 50-52)*.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Wai Lun Leung whose telephone number is (571) 272-5504. The examiner can normally be reached on 9:30am-9:00pm Mon-Thur.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DWL
January 17, 2007

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